

These examples are but a foretaste of the distributional data that we hope ultimately to extract from the material. The distribution charts I have included were redrawn for reproduction by Mr. Currie, to whom I am deeply grateful. Both of us are greatly indebted to the Director and staff of the Marine Biological Association's Plymouth Laboratory for providing unrivalled working facilities before the new premises of the National Institute of Oceanography were available.

¹ Currie, R. I., *Nature*, **171**, 497 (1953).

² Sargent, Marston C., and Walker, Theodore J., *J. Mar. Res.*, **7**, No. 29 490 (1948).

³ Gunther, E. R., *Discovery Repts.*, **13**, 107 (1936).

⁴ Brongersma-Sanders, Dr. Margaretha, *Verk. Akad. Wet. Amst.*, 2nd Sect., D1, **45**, No. 4, pp. 1-112 (1948).

⁵ Marshall, S. M., and Orr, A. P., *J. Mar. Biol. Assoc.*, **14**, 857 (1927).

⁶ Braarud, T., *Hvalradets Skrifter*, No. 28 (1945).

⁷ Allen, W. E., *Contr. Scripps Inst. Oceanogr.*, N.S., No. 287 (1947).

⁸ Graham, H. W., *Trans. Amer. Micro. Soc.*, **62**, No. 3 (1943).

⁹ Hart, T. J., and Marshall, N. B., *Nature*, **168**, 272 (1953).

OBITUARIES

Prof. J. H. Orton, F.R.S.

JAMES HERBERT ORTON, emeritus professor of zoology in the University of Liverpool, died on February 2, less than four years after his retirement from the Derby chair and the directorship of Port Erin Marine Biological Station.

Before going to Liverpool in 1929, Orton had spent nearly twenty years as naturalist (latterly, chief naturalist) at the Plymouth laboratory of the Marine Biological Association. Both at Plymouth and at Port Erin, Orton conducted vacation classes in marine biology and became known to large numbers of students, among whom his infectious enthusiasm proved a means of starting many on a career of marine biology.

During his tenure of the Liverpool chair of zoology, Orton was a popular figure with his students and the younger members of his staff. He did not, however, come into very close academic touch with his students, either by lecturing or otherwise, until their later honours or research years; but at this period they found him to be a wise guide and friendly counsellor in their studies. He was ever on the look-out for potential research workers in his chosen subject, and, having found them, never hesitated to demand from them the highest standards of technical ability and assiduity. These demands never went unheeded, for they never exceeded the standard he so obviously set for himself.

Though primarily a marine biologist, Orton was keenly alive to the importance of freshwater biology; he was an active member of the Dee Fishery Board, and had served on the Council of the Freshwater Biological Association. At Liverpool, he succeeded in establishing a lectureship in freshwater biology and an active school from which important studies in pollution problems and in the life-history of the salmon have issued.

In the marine sphere, Orton produced, over a period of forty years, a succession of papers, reports and notes covering a wide range; but it was upon the biology and economics of the marine mollusca that he became an acknowledged authority, whose opinion was sought by government departments and by commercial oyster-fishing interests alike. His papers on the biology of the 'native' or European flat oyster include studies of its growth, shell-

formation, sex-change, food and feeding, environment, predators and culture-methods, and together form a corpus of knowledge for one species which has scarcely been equalled in the whole realm of zoology. His other molluscan papers include work on the cockle and the limpet, and on this latter he was engaged at the time of his death. The value of his researches was recognized, in 1948, by his election as a Fellow of the Royal Society.

Orton was appointed director of the Port Erin Marine Biological Station in 1939, ten years after his taking up the chair of zoology at Liverpool. The dual task, though a heavy one, was accepted gladly because it afforded him the opportunity of guiding the destinies of a marine station—a task for which his long experience at Plymouth had fitted him. At Port Erin, Orton was manifestly at his best—always eager and cheerful; but his well-laid plans for the establishment of 'Port Erin' as a first-rate centre of biological oceanography in the Irish Sea were delayed and partly frustrated by the onset of the Second World War, during which he took up active military service. After the War, limited expansion became possible, and this was greatly aided by the provision, from University funds aided by the Development Commission, of the M.V. *William Herdman*. Plans for structural changes in the buildings of the Port Erin station were also drawn up, but these have not yet been carried into effect.

The name of James Herbert Orton will remain honoured, at Port Erin as in his department at Liverpool, as that of a man who pursued his life-work with acknowledged success, tireless devotion and utter singleness of purpose.

J. R. BRUCE

Dr. A. N. Zavaritzky

ALEXANDER NIKOLAEVICH ZAVARITZKY, who died at his home in Moscow on July 23, 1952, was one of the most prominent petrologists in the U.S.S.R. He was born on March 14, 1884, in the town of Ufa, being educated at the gymnasium (grammar school) there, and then he graduated in 1909 from the St. Petersburg (now Leningrad) Mining Institute. In his capacity as lecturer in the Mining Institute, he assisted E. S. Fedorov and K. T. Bogdanovich in the work on petrology and ore deposits, and much of his subsequent scientific career was devoted to welding these two subjects together.

In 1921 Zavaritzky became a professor in the Mining Institute, but, as is usual in Russia, he combined teaching with a very active participation in the work of the official Geological Survey. At first he concentrated on the study of the magnetite ores of the Ural Mountains, especially on the ores of Mount Magnitnaya, which eventually played such an important part in the development of Soviet industry. The results of his research on the occurrence and modes of origin of these ores were published in a three-volume work in 1922-27. This work was followed by a number of publications, dealing with a great variety of subjects, among which may be singled out the ultrabasic rocks of the Urals, platinum deposits, alkaline rocks and pyrite deposits. In 1931, Zavaritzky began the exploration of the distant and difficult region of Kamchatka. He not only published valuable papers on Kamchatka's volcanoes but also organized an extensive survey of this region, and he eventually became the head of the newly established Volcanological Laboratory in Moscow and of its

branch in Kamchatka. He also studied the volcanic rocks of Armenia and Manchuria. From 1945, in collaboration with L. G. Kvasha, he began the reorganization of the extensive meteorite collections of the Soviet Union. He also published a number of papers dealing with minerals, microscopical methods and apparatus. In addition to several text-books, Zavaritzky published two important books dealing with the physico-chemical principles of the formation of igneous rocks (1926) and the petrochemistry of igneous rocks (1944). A general account of his scientific work has already appeared in *Nature* (157, 378; 1946), and a number of his works have been abstracted (*Min. Abstr. Min. Mag.*). A summary of recent work on the volcanoes of Kamchatka has been published in the *Bulletin Volcanologique* (Ser. 2, 8, 87; 1949).

In 1939 Zavaritzky was elected a member of the Academy of Sciences and moved to Moscow, where he occupied a number of important scientific posts, combining administration, research, editorship and teaching. All his published work is characterized by a remarkable thoroughness and by lucidity of exposition. He was a first-class petrologist and an outstanding specialist on ore deposits. As a teacher, research worker and organizer, Zavaritzky will long be remembered in the U.S.S.R. and his death lamented by his numerous friends, colleagues and pupils.

S. I. TOMKIEFF

Dr. J. A. Hewitt

THE death on March 10 of Dr. James Arthur Hewitt robs preclinical circles in the University of London of a figure well known for more than thirty years. He was born in 1889, and after being at Glasgow High School and Hutcheson's Grammar School, he took a B.Sc. in St. Andrews in 1911, with special honours in chemistry, natural history and physiology. He became assistant to Prof. P. T.

Herring and later senior assistant, acting as head during the prolonged absence of the professor.

On the outbreak of war in 1914, he joined the Royal Artillery, in which he had a very varied career, being attached at first to the Royal Flying Corps. Later he became a staff officer, Southern Command, specially concerned with anti-gas warfare. He was himself seriously gassed earlier, a fact which led to much subsequent ill-health.

On his return from service, Hewitt joined Prof. W. D. Halliburton at King's College, University of London, and collaborated with him in the first production of *Physiological Abstracts*, a landmark in medical literature. At first, he was a biochemist, obtaining his D.Sc. for researches in carbohydrate metabolism, but he was so extremely versatile that he was able at a later date to take over the teaching of histology from the late Dr. Da Fano. As a teacher he was superb, and he picked up new material easily. At one time, he even gave a course of advanced lectures on the nervous system before the work of Sherrington was so generally appreciated. His election to the chairmanship of the Board of Physiology of the University of London was eloquent of the appreciation of his personal qualities. This was the first time a non-medical man had been elected. He was elected F.R.S.E. in 1947.

He became increasingly popular with young people. While evacuated to Birmingham during 1941, he became a squadron-leader in the A.T.C., and on leaving was given a complimentary dinner. Many will remember, too, his enthusiasm for motor-cars, especially old crocks which he loved to take to pieces and get into working order. Only two years ago he took part in an important rally.

Hewitt will be remembered by his kindly way with students. As adviser to medical students at King's College, he was ever zealous in their interests, and many owe their careers to his insistence with difficult authorities. We all regret his passing.

R. J. S. McDOWALL

NEWS and VIEWS

Presidency of the Royal Aeronautical Society :

Sir William Farren, C.B., F.R.S.

SIR WILLIAM FARREN has been elected president of the Royal Aeronautical Society for the year 1953-54 and will take office at the annual general meeting of the Society to be held on May 7. Sir William was born in Cambridge in 1892 and was educated there at the Perse School and afterwards in the University at Trinity College. After a short spell as an electrical engineer, he joined the Royal Aircraft Factory at Farnborough in 1915 and was in charge of the experimental and design aspects of aerodynamics there until the end of the First World War. From 1920 until 1937 he worked in university circles, being a lecturer at various times in engineering, aerodynamics and aircraft structures at Cambridge and at the Royal College of Science, London. Sir William then abandoned academic work and became deputy director of scientific research at the Air Ministry, rising to the post of director of technical development at the Ministry of Aircraft Production in 1940. The succeeding year he returned to Farnborough as director of the Royal Aircraft Establishment, and the five and a half years during which he held this post (in which he incidentally found the time to take-up

active flying again) were marked by a great increase in the staff, buildings, equipment and general activity in the Establishment. After the War, it was fitting that Sir William should decide to employ his energies in the aircraft industry, and since 1947 he has been technical director of A. V. Roe and Co., Ltd. His many achievements were acknowledged by his election to the Royal Society in 1945 and by a knighthood last year.

Royal Geographical Society : Awards

THE Queen has approved the award by the Royal Geographical Society of Royal Medals as follows : *Founder's Medal*, Mr. P. D. Baird, director of the Montreal office of the Arctic Institute of North America, for explorations in the Canadian Arctic ; *Patron's Medal*, Count Eigil Knuth, leader of the Danish Expedition to Peary Land in 1948-50, for explorations in northern Greenland and for contributions to Eskimo archaeology.

The Council of the Society has made the following awards : *Victoria Medal*, Sir John Myres, emeritus professor of ancient history in the University of Oxford, for contributions to the geographical history of Greek lands and for his services to the development